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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,227	09/06/2001	Dong Hun Jang	B-4208PCT 61	6100

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EXAMINER

WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 06/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/868,227

Applicant(s)

JANG ET AL.

Examiner

Monique M Wills

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This Office Action is responsive to the Amendment filed March 19, 2004. The provisional rejection of claim 1 under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of copending Application No. 09/807,772, is withdrawn. The rejection of claims 1-6 and 8-9 under 35 U.S.C. 103(a) as being unpatentable over Carlson et al., U.S. Patent 6,306,545 in view of Bronstert et al., U.S. Pat. No. 6,416,905 and further in view of Shackle U.S. Pat. No. 5, 573,872, is overcome. The rejection of claim 7 under 35 U.S.C. 103(a) as being unpatentable over Carlson et al., U.S. Patent 6,306,545 in view of McLoughlin U.S. Patent 4,849,144, is overcome. Claims 1-9 are newly rejected as follows:

- Claims 1,2 & 3 are provisionally rejected under the judicially created doctrine of double patenting over claim 1 of copending Application No. 09/807,772. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
- Claims 1-6 & 8 are provisionally rejected under the judicially created doctrine of double patenting over claims 1,2 & 4-6 of copending Application No. 10/276,195. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.
- Claims 4-6, 8 & 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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- Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwahara et al. U.S. Patent 6,395,419.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1,2 & 3 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/807,772. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims have common subject matter as follows:

- Claim 1 of the instant application is embraced by claim 1 of 09/807,772, wherein the solid electrolyte comprises: a thickness of 10-200 microns, 30 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.
- Claim 2 of the instant application is embraced by claim 1 of 09/807,772 wherein the solid electrolyte comprises: a thickness of 10-200 microns, 30

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to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.

- Claim 3 of the instant application is embraced by claim 1 of 09/807,772 wherein the solid electrolyte comprises: a thickness of 10-200 microns, 30 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.

In summary, claim 1 of copending application 09/807,772 is a product-by-process claim rendering the same solid electrolyte as instant claims 1-3. The claim only differs from the subject invention by its method of production. In accordance with MPEP 2113, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, since the process steps are not given patentable weight, the method limitations of 09/807,772 do not patentably distinguish the solid electrolyte from the immediate claims. The process of 09/807,772 produces the same solid electrolyte as the subject invention, including: an absorbent, binder and liquid electrolyte in a microporous film. In the event that the process of 09/807,772 imparts structural differences, Applicant must submit comparative data to illustrate the structural distinctions.

Regarding microporous structures of the electrolyte film, the solid electrolyte of 09/807,772 intrinsically possesses microporous structures, as evidenced by Kuwahara et al. U.S. Patent 6,395,419. Kuwahara teaches that a solid polymer electrolyte made by the process

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of 09/807,772 produces an electrolyte film with micropores. See column 3, lines 55-60 & column 5, lines 1-40.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6 & 8 provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1,2 & 4-6 of copending Application No. 10/276,195. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims have common subject matter as follows:

- Claim 1 of the instant application is embraced by claim 1 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200 microns, 70 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.

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- Claim 1 of the instant application is embraced by claims 1, 4 & 5 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200 microns, 70 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.
- Claims 1-3 of the instant application are embraced by claims 1,2 & 4 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200 microns, 70 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte.
- Claims 1,2 & 4 of the instant application are embraced by claims 1 & 6 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200 microns, 70 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte contains electrolyte salts such as LiPF_6 , LiClO_4 , LiBF_4 , LiASF_6 , LiSO_3CF_3 or $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ dissolved in an organic solvent of ethylene carbonate, propylene carbonate, 1,3-dioxolan, g-butyrolactone, sulfolane or dimethoxyethane.
- Claims 1,3 & 8 of the instant application are embraced by claims 1 & 6 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200 microns, 70 to 95 weight % of an absorbent having a particle size less than 40 microns and 30 to 90 weight % of an ion conductive electrolyte contains electrolyte salts such as LiPF_6 , LiClO_4 , LiBF_4 , LiASF_6 , LiSO_3CF_3 or $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ dissolved in an organic solvent of ethylene carbonate, propylene carbonate, 1,3-dioxolan, g-butyrolactone, sulfolane or dimethoxyethane.
- Claim 1,2 & 5-6 of the instant application are embraced by claims 1 & 3 of 10/276,195, wherein the solid electrolyte comprises: a thickness of 20-200

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microns; 70 to 95 weight % of an absorbent having a particle size less than 40 microns; and 30 to 90 weight % of an ion conductive electrolyte; wherein the absorbent is selected from mineral particles, synthetic oxide compound particles and mesoporous molecular sieves.

With respect to claims 4 & 5 of copending application 10/276,195, the claims are product-by-process claims rendering the same solid electrolyte as instant claims 1-3. The claims only differ from the subject invention by the method of production. In accordance with MPEP 2113, "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, since the process steps are not given patentable weight, the method limitations of 10/276,195 do not patentably distinguish the solid electrolyte from the immediate claims. The process of 10/276,195 produces the same solid electrolyte as the subject invention, including: an absorbent, binder and liquid electrolyte in a microporous film. In the event that the process of 09/807,772 imparts structural differences, Applicant must submit comparative data to illustrate the structural distinctions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6, 8 & 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term “mixture of one or two or more” is of uncertain meaning rendering the claims vague and indefinite. It is unclear as to how a “mixture of one” exists. The Examiner interprets the language as being equivalent to “selected from the group consisting of”, whereby each component may be any one of the materials listed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuwahara et al.

U.S. Patent 6,395,419.

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With respect to claim 1, Kuwahara teaches a solid polymer electrolyte comprising: a microporous (col. 3, lines 55-60) electrolyte film having a thickness less than 100 microns (col. 4, lines 5-10); an ion conductive liquid electrolyte in an amount of 60% by weight based on the total weight of the electrolyte including the liquid (col. 4, lines 55-68); and an absorbent filler having a particle size of less than 10 microns (col. 4, lines 5-15) in an amount of 5 to 70% by weight of the polymer (col. 3, lines 55 through column 4, lines 1-15). With respect to claims 4 & 8, the ion conductive liquid electrolyte contains electrolyte salts such as LiPF_6 , LiClO_4 , LiBF_4 , LiAsF_6 , LiSO_3CF_3 or $\text{LiN}(\text{CF}_3\text{SO}_2)_2$ dissolved in an organic solvent of ethylene carbonate, propylene carbonate, 1,3-dioxolan, γ -butyrolactone, sulfolane or dimethoxyethane (column 4, lines 15-35). Wherein “about 70%” embraces applicant’s “at least more than 70%”, because the language broadly includes percentages such as 69 and 71%.

With respect to claims 5 & 9, the absorbent is silicon oxide or aluminum oxide (col. 3, lines 50-68) and the polymer binder is a vinylidene fluoride-hexafluoropropylene copolymer (col. 3, lines 30-40). With respect to claim 6, the absorbent is a synthetic oxide compound of silicon oxide, titanium oxide, aluminum oxide or zinc oxide (col. 3, lines 55-68). With respect to claim 7, Kuwahara teaches a lithium rechargeable cell comprising a microporous electrolyte film circumscribed by positive and negative electrodes (col. 5, lines 40-68). The instant claims are anticipated by the prior art set forth. With respect to claims 2, 3 & 7, the claims are product-by-process claims, that produce the same product as the prior art. The claims only differ from Kuwahara by their method of production. In accordance with MPEP 2113, “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior

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product was made by a different process.” In re Thorpe, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, since the process steps are not given patentable weight, the method limitations of claim 2, 3 & 7 do not patentably distinguish the instant solid electrolyte or lithium rechargeable battery from Kuwahara.

Response to Arguments

Applicant's arguments, see pages 2-4, filed March 19, 2004, with respect to the rejection(s) of claim(s) 1-6 & 8-9 under 35 U.S.C. 103(a) to Carlson '545 in view of Bronstert '905 and further in view of Shackle '872 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kuwahara et al. U.S. Patent 6,395,419.

Applicant's arguments, with respect to the rejection(s) of claim(s) 7 under 35 U.S.C. § 103(a) to Carlson '545 in view of McLoughlin '144 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kuwahara et al. U.S. Patent 6,395,419.

Applicant's arguments with respect to the statutory double patenting rejection of claim 1 has been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MW

06/04/04


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